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FOREST STATISTICS REVIEW
1980-81

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FOREWORD

This report presents statistical detail pertaining to the activities of the Alberta Forest Service during the 1980-81 fiscal year. Summary tables are provided for comparative analysis and observations of trends. Industrial statistics are provided where they are helpful in obtaining a total provincial overview.

ACKNOWLEDGEMENTS

Tabular and graphic materials in this report were compiled by the respective branches of the Alberta Forest Service. Although monitoring of industrial reforestation activities is the responsibility of the Timber Management Branch, tabular data has been included in the Reforestation section of the report to provide a total reforestation overview.

A. TIMBER MANAGEMENT

1. Introduction

Timber production from public lands in 1980-81, excluding wood chips, totalled 5 453 316 cubic metres. Coniferous lumber and plywood logs accounted for 3 782 445 cubic metres as compared to 3 910 597 cubic metres produced in 1979-80.

2. Timber Management Planning

The total number of active timber dispositions for this year is 45 188. Timber Licences and Commercial Timber Permits (CTP) account for 401 dispositions and Local Timber Permits (LTP) and tags account for 44 787. Table A1 summarizes the number of active timber dispositions over the past 10 years.

Table A1

TEN-YEAR SUMMARY — TIMBER DISPOSITIONS

Year	Miscellaneous and Local Timber Permits and Tags (Number)	Forest Management Agreement Timber Licences and Commercial Timber Permits (Number)
1971-72	1 825	548
1972-73	2 881	633
1973-74	4 086	495
1974-75	13 199	522
1975-76	15 476	486
1976-77	15 282	456
1977-78	19 572	475
1978-79	26 842	391
1979-80	31 294	392
1980-81	44 787	401

2. (a) Forest Management Agreements (FMAs)

Table A2 lists the companies that have entered into FMAs with the Province of Alberta. The Table shows the annual allowable cut (AAC) allocated under each agreement.

Table A2

FOREST MANAGEMENT AGREEMENTS
ACTIVE OPERATIONS

FMA Holder	Coniferous AAC (M cubic metres)	Management Plan Status
Procter and Gamble Cellulose Ltd. Grande Prairie, Alberta	1 246	Detailed FMA Plan Approved January 17, 1978.
St. Regis (Alberta) Ltd. Hinton, Alberta	1 052	Second detailed FMA Plan Approved in 1979.
Simpson Timber Co. (Alberta) Ltd. Blue Ridge, Alberta	467	Preliminary FMA Plan Approved January 17, 1978.
Canadian Forest Products Ltd. Grande Prairie, Alberta	*440	Detailed FMA Plan submitted March 1, 1981 and is under review.
Canadian Forest Products Ltd. (Dell Acres) Hines Creek, Alberta	9	Detailed FMA Plan Approved October 1, 1975.
British Columbia Forest Products Ltd. Grande Cache, Alberta	*1 033	Preliminary FMA Plan Submitted July 3, 1981 and is under review.
TOTAL	4 233	

*Estimated

2. (b) Coniferous Timber Quota Planning

There were seven coniferous timber quotas granted this year; three in the Edson Forest and four in the Whitecourt Forest. Two Coniferous quotas were amalgamated into one in the Slave Lake Forest. Table A3 lists the total number of coniferous quotas per forest.

Table A3

CURRENT CONIFEROUS TIMBER QUOTA STATUS
(On March 31, 1982)

Forest	Quotas (Number)	Authorized Annual Allowable Cut (M cubic metres)
Athabasca	8	192
Bow/Crow	14	224
Edson	11	64
Footner Lake	10	482
Grande Prairie	1	70
Lac La Biche	6	104
Peace River	10	287
Rocky/Clearwater	29	163
Slave Lake	30	644
Whitecourt	24	534
TOTAL	143	2 764

3. Woods Operations

Timber harvesting operations on public land must be conducted in accordance with an approved operating plan (AOP). Field staff approved 97 quota timber licence AOPs and 60 commercial timber permit AOPs. Staff also conducted 762 woods inspections on the timber licence areas and 1 120 woods inspections on the commercial timber permit areas, related to the approved AOPs.

Additional operations and inspections were carried out on four Forest Management Agreement areas. These include St. Regis (Alberta) Ltd., Canadian Forest Industries Ltd., Procter and Gamble Cellulose Ltd., and Simpson Timber Co. (Alberta) Ltd. These companies accounted for an additional 5 AOPs and 315 woods inspections. These additions bring the total number of approved annual operating plans to 162 and the total number of woods inspections to 2 197.

4. Scaling

The volume of 521 weight scale sample loads of logs check-scaled by the Forest Service amounted to 29 230 cubic metres.

During the year, 148 scaling permits and 23 scaling licences were issued.

5. Timber Audits

A total of 29 audits of timber volumes produced by industry were completed during the year.

Table A4

TIMBER DISPOSITIONS HANDLED

Disposition	Class	Granted	Sold	Not Sold	Total
Coniferous Timber Quota		7	-	-	7
Licences	Coniferous - Quota	27	-	-	27
Commercial Timber Permits	Coniferous - Green	-	31	5	36
	Coniferous - Dead and Damaged	8	1	5	14
	Deciduous	-	5	2	7
Local Timber Permits		2 138	-	-	2 138
Tree Tags		42 649	-	-	42 649
Custom Sawmill, Planer Mill or Timber Treating or Processing Plant Permits		-	46	-	46

Of the 49 Commercial Timber Permits offered for sale only 37 sold.

Table A5

VOLUME AND VALUE OF TIMBER PRODUCTION ON PUBLIC LANDS

Product	Volume	Unit	Species	Unit Price $	Value $
Lumber and Plywood Logs	3 782 445	Cubic Metre	Coniferous	40.83	154 437 229
	106 206	Cubic Metre	Deciduous	31.45	3 340 179
Round Timber	144 031	Cubic Metre	Coniferous	83.43	12 016 506
	4 166	Cubic Metre	Deciduous	83.43	347 569
Pulpwood	1 326 305	Cubic Metre	Coniferous	17.45	23 144 022
	94	Cubic Metre	Deciduous	17.45	1 640
Wood Chips	790 000	Cubic Metre	Coniferous	10.24	8 089 600
Fuelwood	45 158	Cubic Metre	Coniferous	18.70	844 455
	21 311	Cubic Metre	Deciduous	18.70	398 516
Slabs	15	Cubic Metre	Coniferous	20.77	312
Railway Ties	23 520	Cubic Metre	Coniferous	64.41	1 514 923
Lath	65	Cubic Metre	Coniferous	454.55	29 546
Christmas Trees	37 396	Number	Coniferous	3.00	112 188
Trees for Transplanting	36 384	Number	Coniferous-Deciduous	2.00	72 768
TOTAL	6 243 316				204 349 453

Table A6

TEN-YEAR SUMMARY - TIMBER PRODUCTS

Products	YEAR			
	1980-81	1979-80	1978-79	1977-78
Coniferous Lumber and Plywood Logs (M cubic metres)	3 782	3 911	2 936	2 884
Deciduous Lumber (M cubic metres)	106	18	25	13
Round Timber (cubic metres)	148 197	171 343	81 618	226 560
Pulpwood (M cubic metres)	1 326	1 587	1 547	1 651
Wood Chips (M bone dry units)	279	282	311	190
Fuelwood and Slabs (cubic metres)	66 484	64 490	60 417	48 140
Railway Ties (cubic metres)	23 520	13 663	21 702	27 528
Lath (cubic metres)	65	82	301	1 319
Christmas Trees (Number)	37 396	34 291	30 727	
Trees for Transplanting (Number)	36 384	215 518	61 377	28 507
TOTAL* (M cubic metres)	5 452	5 765	4 672	4 852

*Excludes wood chips, christmas trees, and trees for transplanting.

Table A6

TEN-YEAR SUMMARY - TIMBER PRODUCTS

YEAR					
1976-77	1975-76	1974-75	1973-74	1972-73	1971-72
2 579	2 142	1 704	2 932	2 700	2 288
30	26	51	47	86	51
169 920	84 960	141 600	84 960	84 960	56 640
1 581	1 731	2 212	1 906	1 006	763
112	57	85	117	21	-
50 547	12 035	12 035	9 628	19 256	12 035
35 224	48 396	33 744	14 652	28 120	31 820
-	606	887	1 294	1 434	1 389
17 702	18 367	16 737	7 820	17 580	16 908
37 644	17 059	16 201	2 441	5 141	1 322
4 446	4 045	4 156	4 996	3 925	3 204

Table A7

SUMMARY OF TIMBER OPERATIONS ON PUBLIC LANDS

PRODUCT	CLASS	UNIT	TIMBER DISPOSITIONS		TOTAL
			F.M. AGREEMENTS TIMBER LICENCES COMMERCIAL PERMITS	LOCAL TIMBER PERMITS AND TAGS	
Lumber and Plywood Logs	Coniferous	Cubic metres	3 560 259	222 186	3 782 445
	Deciduous	Cubic metres	89 116	17 090	106 206
Round Timber	Coniferous	Cubic metres	31 544	112 487	144 031
	Deciduous	Cubic metres	--	4 166	4 166
Pulpwood	Coniferous	Cubic metres	1 326 200	105	1 326 305
	Deciduous	Cubic metres	--	94	94
Fuelwood	Coniferous	Cubic metres	3 028	42 130	45 158
	Deciduous	Cubic metres	--	21 311	21 311
Slabs	Coniferous	Cubic metres	15	--	15
Railway Ties	Coniferous	Cubic metres	23 505	15	23 520
Lath	Coniferous	Cubic metres	--	65	65
*TOTAL VOLUME (excluding wood chips)		Cubic metres	5 033 667	419 649	5 453 316
Chirstmas Trees		Number	--	37 396	37 396
Trees for Transplanting		Number	--	36 384	36 384
Wood Chips		Cubic metres	790 000	--	790 000

* TOTAL VOLUME does not include 18 268 cubic metres of wood products from Metis Colonies.

B. REFORESTATION AND RECLAMATION

1. Introduction

This Branch is responsible for all Alberta Forest Service reforestation and reclamation projects, the provincial forest genetics and tree improvement program and the Pine Ridge Forest Nursery.

2. Reforestation

Under the regular reforestation program, regeneration surveys were completed on 9 936 hectares of which 8 322 hectares or 84 percent were found satisfactorily stocked (see table B1). For a ten year summary of regeneration survey results see table B2. Silviculture treatments included: Mechanical scarification of 6 102 hectares, experimental chemical site preparation of 52 hectares, seeding of 4 687 hectares and planting of 4 523 087 seedlings on 3 553 hectares. In addition to this work 6 945 hectolitres of cones (4 377 spruce and 2 568 pine) were collected and 217 hectares were prescribe burned (see table B3). For a ten year summary of work conducted by the Alberta Forest Service see table B5.

Under the Maintaining Our Forests program, stocking surveys were completed on 128 489 hectares (93 864 hectares aerial recon., 16 463 hectares ground recon. and 18 162 hectares intensively ground surveyed). Silviculture treatments included: Land clearing of 6 702 hectares, scarification of 3 001 hectares, planting of 3 659 933 seedlings on 2 305 hectares and thinning of 82 hectares of young Lodgepole Pine. In addition to this work, 9 hectolitres of pine cones were collected (see table B7).

3. Reclamation

The operational reclamation program continued with the rehabilitation and clean-up of an additional eighty diverse disturbances and sites in the Green Zone. These included abandoned industrial sites, access roads and trails, seismic and coal exploration lines, and gravel pits. A major and an unusual reclamation project undertaken was the continuation of the removal of standing dead trees, drifting wood and wood debris along the 110 kilometre shoreline of the Brazeau Reservoir. Conditions in the 4 000 hectare flooded area have improved sufficiently to allow boating, sailing, water skiing and angling on most sections of the reservior.

Two new reclamation field trails were established. One was an exotic woody species trail on materials resulting from oil sands mining in the Mildred Lake area; and the other was the methods of establishing native grasses on coal over-burden in the Eastern Slopes of the Rockies. Assessments were carried out on the new and on all other existing field trails.

Work continued on the native woody species seed collection program from the Eastern Slopes, and their evaluation for use in reclamation. A review of native seed pre-treatment requirements for germination was completed. The Branch and the oil sands industry were involved in developing and defining the terms of reference of a joint government/ industry sponsored reclamation research program on woody species for reclamation.

4. Genetics and Tree Improvement

The joint A.F.S. - industry genetics and tree improvement program continued; with the location and selection of forty lodgepole pine and twenty-eight white spruce superior trees. A total of 1 092 trees have been located and selected to date for propagation and genetic testing as part of four regional tree breeding projects. A ten hectare seed orchard plantation was established in the Grande Prairie Forest and a research seed orchard was established at Pine Ridge Forest Nursery.

Fifty-six research seedlot entries were added to the genetics Seed Bank and 321 seedlots were germination tested. Experimental planting stock production for genetics and tree improvement research, and related projects consisted of 50 800 seedlings and 736 grafts. Eight research plantations were established at various locations throughout the province. These consisted primarily of provenance research and seed source screening trials of white spruce, ponderosa pine, scots pine and western larch.

5. Pine Ridge Forest Nursery

Construction of the Pine Ridge Forest Nursery was completed during the 1980-81 fiscal year.

The Research and Investigations Section continued to provide technical assistance in developing production techniques and procedures in the bareroot, container and seed processing functions. Seed extraction and testing activity was considerably lower than in 1979-80; with a total of 6 080 hectolitres of lodgepole pine and 2 309 hectolitres of white spruce cones being collected and processed (see table B9). The Containerized Seedling Program continued with two seedings taking place this year. A total of 11 575 000 seedlings were grown; 12 446 000 seedlings were shipped to reforestation sites for planting (see table B10).

The Bareroot Seedling Program completed its first full growth cycle of three years during 1980-81. Production was increased this year to 14 123 160 "1-0" seedlings, increasing the total inventory of field stock to 24 724 351 seedlings. The first full scale lifting took place during the fall of 1980; with a total of 3 956 525 seedlings being lifted, and 929 397 seedlings being shipped (see table B10).

Table B1

REGENERATION SURVEYS
1980-81

FOREST	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (Hectares)
	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	
Athabasca	--	--	--	359	172	531	531
Bow/Crow	710	341	1 051	242	0	242	1 293
Edson	149	262	411	4 593	2 287	6 881	7 292
Footner Lake	488	50	538	1 198	1 101	2 299	2 837
Grande Prairie	1 384	24	1 408	7 845	630	8 475	9 883
Lac La Biche	1 434	141	1 575	0	14	14	1 589
Peace River	270	19	289	283	362	645	934
Rocky/Clearwater	1 272	224	1 496	64	290	354	1 850
Slave Lake	2 524	509	3 033	1 193	1 019	2 212	5 245
Whitecourt	91	44	135	1 460	208	1 668	1 803
TOTAL	8 322	1 614	9 936	17 237	6 083	23 321	33 257

Table B2

TEN-YEAR SUMMARY — REGENERATION SURVEYS
1971-1981

YEAR	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (Hectares)
	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	
1971-72	11 502	5 509	17 011	3 034	959	3 993	21 004
1972-73	6 187	7 846	14 033	5 853	5 556	11 409	25 442
1973-74	10 422	15 245	25 667	9 669	7 391	17 060	42 727
1974-75	6 541	3 404	9 945	10 113	7 495	17 608	27 553
1975-76	12 750	6 091	18 841	10 788	5 401	16 189	35 030
1976-77	11 055	6 226	17 281	8 715	8 297	17 012	34 293
1977-78	10 114	8 841	18 955	7 295	9 702	16 998	35 953
1978-79	10 271	2 696	12 967	12 126	8 779	20 905	33 872
1979-80	10 315	3 154	13 469	13 620	6 938	20 558	34 027
1980-81	8 322	1 614	9 936	17 237	6 083	23 321	33 257

Table B3

REFORESTATION WORK CONDUCTED BY THE ALBERTA FOREST SERVICE
1980-81

FOREST	Scarification (Hectares)	Seeding (Hectares)	CONES COLLECTED			Thinning (Hectares)	SEEDLINGS PLANTED		Prescribed Burn (Hectares)
			Pine (Hecto-litres)	Spruce (Hecto-litres)	Other (Hecto-litres)		Conventional (Number)	Container (Number)	
Athabasca	99	--	--	--	--	--	--	278 118	--
Bow/Crow	746	392	1 025	--	--	--	337 200	123 174	--
Edson	212	92	434	--	--	--	222 850	67 540	--
Footner Lake	142	182	--	979	--	--	--	429 000	--
Grande Prairie	610	506	784	--	--	--	--	--	217
Lac La Biche	92	248	--	110	--	--	--	647 680	--
Peace River	165	139	6	--	--	--	209 150	406 125	--
Rocky/ Clearwater	701	710	1 054	439	--	--	--	87 000	--
Slave Lake	3 174	2 418	--	1 040	--	--	--	536 000	--
Whitecourt	161	--	1 074	--	--	--	--	1 179 250	--
TOTAL	6 102	4 687	4 377	2 568	--	--	769 200	3 753 887	217

* One hectolitre of spruce cones yields approximately 1.168 kg of seed and one hectolitre of pine cones yields approximately 0.312 kg of seed.

Table B4

REFORESTATION BY FOREST INDUSTRIES IN ALBERTA

Forest	Scarification (Hectares)	Seeding (Hectares)	Seed Extracted		Controlled Burning (Hectares)	Thinning (Hectares)	Seedlings Planted	
			Pine (Kilograms)	Spruce (Kilograms)			Conventional (Number)	Container (Number)
Athabasca	177	172	--	--	--	--	--	--
Bow/Crow	186	--	135	14	--	--	30 250	246 800
Edson	2 636	--	606	95	--	215	--	1 480 700
Footner Lake	114	114	--	64	--	--	--	403 180
Grande Prairie	1 029	870	3 648	--	--	--	--	2 653 430
Lac La Biche	--	--	--	--	--	--	--	95 750
Peace River	983	678	303	--	--	--	--	611 970
Rocky/Clearwater*	762	8	11	--	--	--	--	55 000
Slave Lake	105	105	--	23	--	--	--	354 000
Whitecourt	491	--	--	--	--	--	--	872 000
TOTAL	6 483	1 947	4 703	196	--	215	30 250	6 772 830

*Information incomplete for 1980-81.

Table B5

TEN-YEAR SUMMARY — REFORESTATION BY THE ALBERTA FOREST SERVICE
1971-1981

Year	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1971-72	7 243	5 385	1 374	1 655 486	513 012
1972-73	6 979	4 701	100	333 412	1 127 373
1973-74	6 594	1 332	108	* 1 228 392	1 334 588
1974-75	6 296	2 047	72	** 1 140 705	1 224 396
1975-76	6 697	1 885	104	*** 943 702	3 514 664
1976-77	4 757	2 898	546	**** 827 520	2 294 659
1977-78	6 684	4 782	111	224 478	2 378 730
1978-79	10 152	4 654	11	94 118	2 080 885
1979-80	6 324	3 325	15	-	4 898 809
1980-81	6 102	4 687	-	769 200	3 753 887

* Includes 50 800 Wildlings Planted
** Includes 26 000 Wildlings Planted
*** Includes 82 032 Wildlings Planted
**** Includes 137 776 Wildlings Planted

Table B6

TEN-YEAR SUMMARY — REFORESTATION BY FOREST INDUSTRIES
1971-1981

Year	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1971-72	5 452	217	--	--	643 657
1972-73	5 501	1 745	--	40 000	929 244
1973-74	6 793	1 939	--	* 64 070	957 594
1974-75	6 334	2 313	--	** 140 462	3 129 239
1975-76	10 840	2 862	40	1 329 364	1 732 820
1976-77	9 849	3 427	37	103 675	3 284 978
1977-78	10 292	5 328	20	--	4 253 860
1978-79	10 244	2 852	234	44 500	6 164 579
1979-80	8 819	2 218	256	--	5 430 000
1980-81	6 483	1 947	215	30 250	6 773 830

* Includes 8 500 Wildlings Planted
** Includes 3 000 Wildlings Planted

Table B7

SUMMARY OF MAINTAINING OUR FORESTS
REFORESTATION FIELD WEEK
1980-81

Forest	SITE PREPARATION		PLANTING		CONE COLLECTION			Thinning (ha.)
	Land Clearing (ha.)	Scarification (ha.)	Conventional (Number)	Container (Number)	Pine *(hl.)	Spruce (hl.)	Other Specify (hl.)	
Footner Lake	--	1 135	3 400	1 269 060	--	--	--	--
Lac La Biche	2 167	436	--	630 417	--	--	--	--
Peace River	3 294	923	--	1 200 000	9	--	--	--
Slave Lake	1 259	507	--	557 056	--	--	--	--
Rocky/Clearwater	--	--	--	--	--	--	--	82
TOTAL	6 720	3 001	3 400	3 656 533	9	--	--	82

*Hectolitre (hl) - one hectolitre is approximately equivalent to 2.75 bushels.

Table B8
MAINTAINING OUR FORESTS
REGENERATION SURVEYS

Forest	STOCKING SURVEYS		
	Aerial Recon. (ha.)	Ground Recon. (ha.)	Ground Intensive (ha.)
Footner Lake	7 200	1 279	9 633
Lac La Biche	22 603	--	2 863
Peace River	3 763	10 328	--
Slave Lake	60 298	4 856	5 666
TOTAL	93 964	16 463	18 162

Table B9
PINE RIDGE FOREST NURSERY SEED PROGRAM

Pine	1978-79	1979-80	1980-81
Cones received (hl)	16 991	7 277	6 080
Cones processed (hl)	16 991	7 277	6 080
Seed cleaned (kg)	--	4 623	1 647
Seed stored (kg)	5 783	9 906	10 318
Spruce	**1978-79**	**1979-80**	**1980-81**
Cones received (hl)	882	15 359	2 309
Cones processed (hl)	882	15 359	2 309
Seed cleaned (kg)	--	25 084	2 843
Seed stored (kg)	11 303	35 697	31 184

Table B10

PINE RIDGE FOREST NURSERY BAREROOT AND CONTAINER SEEDLING PROGRAM

Program	1978-79		1979-80		1980-81	
	Pine	Spruce	Pine	Spruce	Pine	Spruce
BAREROOT PROGRAM						
Seedlings grown:						
Age 0 - 1.0 years	1 000 000	6 300 000	300 000	6 300 000	1 695 720	12 427 440
Age 1.0 - 2.0 years	---	---	800 000	5 900 000	844 670	6 087 848
Age 2.0 - 3.0 years	---	---	---	---	--	3 668 673
Seedlings lifted	---	---	115 000	---	1 254 558	2 701 967
Seedlings Shipped	---	---	---	---	895 333	34 064
CONTAINER PROGRAM						
Seedlings grown	2 100 000	4 530 000	3 900 000	9 300 000	1 810 000	9 765 000
Seedlings Shipped	776 300	1 164 500	2 300 612	8 002 000	2 967 000	9 479 000

C. FOREST LAND USE

1. Introduction

The following information pertains to forest land use activities of the Alberta Forest Service.

2. Grazing

There was a small decrease in the total AUM's used in the Rocky Mountain Forest Reserve from 72 950 in 1979-80 to 71 886 in 1980-81. Grazing revenue from 267 permits on 86 Allotments was $158 678.80. In addition 217 500 hectares and 116 340 AUM's were managed on other forested lands within the Green Area under 529 leases, permits and licences. Head Tax Grazing Allotments accounted for an additional 19 permits which cover 56 343 hectares and 18 126 AUM's.

Two hundred and six hectares of brush were cleared in Harold Creek, Grease Creek, Aura Cache and Jumping Pound Allotments. Six miles of fence line were cleared in the Jumping Pound Allotment with salvage of timber for sale and as firewood. The total cost of range improvement and fence line clearing was $120 000.00.

3. Petroleum and Natural Gas

A decreased use of forest lands by the Petroleum and Natural Gas Industry was evidenced by an 18 percent decrease in applications processed for land surface rights. Table C1 shows the applications processed by forest, for the last five years.

Table C1
APPLICATIONS PROCESSED FOR LAND SURFACE RIGHTS FOR THE PETROLEUM AND NATURAL GAS INDUSTRY

FOREST	1980-81	1979-80	1978-79	1977-78	1976-77
Athabasca	179	98	60	47	105
Bow/Crow	83	111	128	81	84
Edson	310	413	128	167	223
Footner Lake	210	345	287	259	413
Grande Prairie	402	628	338	196	89
Lac La Biche	607	458	428	363	380
Peace River	245	239	320	351	442
Rocky/Clearwater	183	374	283	266	190
Slave Lake	625	672	491	413	386
Whitecourt	483	721	655	485	376
TOTAL	3 327	4 059	3 118	2 628	2 688

In addition 1 059 amendments and a total of 336 Sand and Gravel Dispositions and Miscellaneous were approved. Furthermore, numerous holdings, land use restrictions and administrative reservations were processed.

Timber Damage assessments on Land Dispositions - timber damage assessments were computed on 1 325 dispositions in 1980-81.

4. Watershed Management

As part of a continuing inventory program of precipitation and streamflow, a data network has been established. A total of 135 precipitation storage gauges and 23 water level recorders were collecting data in the Green Area in 1980-81.

Table C2
PRECIPITATION AND STREAMFLOW NETWORK

FOREST	NUMBER OF PRECIPITATION GAUGES	FREQUENCY OF READING	NUMBER OF WATER LEVEL RECORDERS
Athabasca	1	semi-annually	
Bow/Crow	46	10 monthly 36 semi-monthly	3
Edson	18	11 semi-annually 7 monthly in Tri-Creeks	5
Footner Lake	4	semi-annually	
Grande Prairie	20	semi-annually	5
Lac La Biche	1	semi-annually	
Peace River	2	semi-annually	
Rocky/Clearwater	22	3 monthly 19 semi-annually	3
Slave Lake	10	semi-annually	3
Whitecourt	11	semi-annually	4

5. Forest Recreation

A total of $638 537 was spent on upgrading and construction of new campgrounds. New construction funds of $378 584 were spent on the following projects:

Rock Island Recreation Area
Cascade Portage Trail
Clausen's Landing Recreation Area
Little Sundance Cross-Country Ski Trails
Mason Creek Recreation Area
Caribou Lake Recreation Area

Nose Lake Recreation Area
Marie Lake Recreation Area
Chambers Creek Snowmobile Trails
Chambers Creek Staging Area
Upper Shunda Staging Area

Six river inventories and a trail inventory in Willmore Wilderness Park were completed. Fifteen permits were issued to Commercial Trail Riding Outfitters.

The Alberta Forest Service continued to provide camping facilities for individuals seeking a more primitive recreational experience than that provided by the national and provincial parks campgrounds.

Accommodations at Alberta Forest Service campgrounds include tent and trailer stalls each containing a picnic table and fireplace. Drinking water is supplied by hand pumps and toilets are the pit privy type. Firewood is supplied. Individual unit services or hookups are not provided. Several recreation areas are located on lakes which allow motorized boating. Where this is the case, the recreation area also provides a boat launch.

Table C3

LIST OF FOREST RECREATION AREAS AND CAMPING UNITS AVAILABLE

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Athabasca	Cascade Rapids Remote	8	-	92 km E of Ft. McMurray on Clearwater River
	Clausen's Landing Remote	4	-	115 km N of Ft. McMurray on Athabasca River
	Dore Lake	12	10	15 km N of Ft. Chipewyan
	Engstrom Remote	6	-	73 km E of Ft. McMurray on Clearwater River
	Magua Lake	22	18	40 km S of Ft. McMurray
	Miseieutin Remote	4	-	52 km E of Ft. McMurray on Clearwater River
	Whitemud Falls Remote	4	-	109 km E of Ft. McMurray on Clearwater River
Bow/Crow	Allison	-	10	9 km NW of Crowsnest
	Beaver Mines Lake	73	40	30 km S of Crowsnest
	Bluerock	84	2	45 km W of Turner Valley
	Burnt Timber	18	10	65 km SW of Sundre
	Castle Falls	26	18	15 km S of Crowsnest
	Castle River	26	10	12 km S of Crowsnest
	Cat Creek	10	7	45 km SW of Longview
	Cataract Creek	102	20	50 km SW of Longview
	Chinook	34	10	12 km NW of Crowsnest
	Deer Creek	--	10	45 km W of Sundre
	Dutch Creek	22	7	30 km NE of Crowsnest
	Fallen Timber Creek	71	10	17 km W & 53 km N of Cochrane
	Gorge Creek Day Use	--	16	30 km W of Turner Valley
	Indian Grave	28	4	40 km S of Longview
	James Wilson	15	15	40 km W of Sundre
	Livingstone Falls	17	10	60 km N of Crowsnest
	Lynx Creek	28	10	20 km S of Crowsnest
	North Fork	24	10	15 km W of Millarville
	North Ghost	175	8	70 km NW of Cochrane
	Oldman River	12	10	40 km N of Crowsnest
	Racehorse	23	13	25 km N of Crowsnest
	Red Deer	66	12	55 km SW of Sundre
	Sandy McNabb	98	31	25 km W of Turner Valley
	Sheep Falls	--	8	40 km W of Turner Valley
	Sibbald Flats	100	20	15 km S of Morley
	Waiparous Creek	56	10	65 km NW of Cochrane
	Wildhorse	--	9	70 km W of Sundre

Table C3 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Edson	Big Berland	18	11	70 km NW of Hinton
	Cardinal River	60	-	90 km SE of Hinton
	Coalspur	8	12	10 km S of Robb
	Cardinal River Viewpoint	--	2	3 km S of Mountain Park
	Eccles Pond	--	8	60 km W of Edson
	Emerson Lakes	8	8	56 km NE of Hinton
	Fairfax Lake	--	8	105 km S of Edson
	Fickle Lake	35	16	39 km SW of Edson
	Blue Bridge	22	10	1 km N of Grande Cache
	Grande Cache Lake	--	8	
	Kinky Lake	10	--	20 km NW of Hinton
	Lambert Creek	8	--	30 km S of Edson
	Little Sundance	6	18	13 km W of Edson
	Lovett	12	--	30 km SE of Coalspur
	Mason Creek	--	16	28 km E of Mayerthorpe
	McLeod River	18	12	26 km SE of Hinton
	Pembina Forks	20	6	109 km S of Edson
	Pierre Grey's Lakes	65	10	93 km NW of Hinton
	Rock Lake	67	20	42 km NW of Hinton
	Watson Creek	36	--	112 km SW of Edson
	Whitehorse Creek	12	--	122 km SW of Edson
	Wildhorse Lake	13	20	25 km SW of Hinton
Footner Lake	Buffalo Tower	--	4	50 km S of Ft. Vermilion
	Buffalo River	--	6	24 km SW of Rainbow Lake
	Hutch Lake	12	14	36 km SE of High Level
	Meander River	6	4	80 km N of High Level
	Rainbow Lake	14	12	65 km S of Rainbow Lake
	Steen River	10	4	150 km N of High Level
	Tall Cree Crossing	20	2	60 km SE of Ft. Vermilion
Grande Prairie	Bison Flats	21	10	160 km SE of Grande Prairie
	Cutbank River	--	1	100 km S of Grande Prairie
	Economy Lake	6	12	38 km S of Goodwin
	Hilltop Lake	10	--	26 km SW of Woking
	House River	20	20	3 km NW of Little Smoky townsite
	Musreau Lake	83	--	80 km S of Grande Prairie
	Simonette River	24	22	19 km SW of Debolt
	Smoky River	30	10	35 km E of Grande Prairie
	Two Lakes	38	--	114 km S&W of Grande Prairie
	Westview	4	4	100 km NW of Grande Prairie

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Lac La Biche	Calling River	5	--	40 km E of Calling Lake
	Crow Lake Remote	17	2	130 km S of Ft. McMurray
	Ironwood	10	5	58 km SE of Lac La Biche
	Lac La Biche River	--	2	50 km Downstream of Athabasca
	Siebert Lake	36	6	77 km N&W of Bonnyville
	Touchwood Lake	32	7	46 km E&N of Lac La Biche
	Wandering River	10	3	10 km N of Wandering River
	Wolf Lake	57	3	56 km N&W of Bonnyville
Peace River	Notikewin	10	--	90 km N of Hines Creek
	Ole's Lake	6	9	86 km W of Hines Creek
	Running Lake	11	20	70 km N&W of Hines Creek
	Stoney Lake	13	6	32 km N of Hines Creek
	Sulphur Lake	12	8	78 km N&W of Hines Creek
Rocky/ Clearwater	Blackstone	10	4	25 km N of Nordegg
	Brazeau Reservoir	41	6	25 km SW of Lodgepole
	Brazeau River	12	6	63 km N of Nordegg
	Brown Creek	13	5	40 km N of Nordegg
	Chambers Creek	32	6	30 km W of Rocky Mountain House
	Crescent Falls	5	--	13 km SW of Nordegg
	Elk Creek	14	5	65 km S of Nordegg
	Elk River	13	--	73 km N of Nordegg
	Fish Lake	100	10	5 km W of Nordegg
	Goldeye Lake	45	--	8 km W of Nordegg
	Harlech	10	--	10 km E of Nordegg
	Haven Creek	8	--	11 km W of Nordegg
	Jackfish Lake	5	--	45 km W of Rocky Mountain House
	Kootenay (Two O'Clock Creek)	20	6	64 km W of Nordegg
	Medicine Lake	34	10	37 km NW of Rimbey
	Mitchell Lake	--	4	27 km S of Rocky Mountain House
	North Ram River	20	--	29 km S of Nordegg
	Peppers Lake	20	6	70 km S of Nordegg
	Phyllis Lake	8	-	16 km W of Caroline
	Prairie Creek	47	6	32 km SW of Rocky Mountain House
	Ram Falls	24	30	50 km S of Nordegg
	Seven Mile	38	6	66 km NW of Ricinus
	Shunda Beaver Dam			
	Shunda Viewpoint	6	12	3 km E of Nordegg

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Rocky/ Clearwater cont'd	South Fork	8	-	28 km SW of Rocky Mountain House
	Strachan	24	14	19 km SW of Rocky Mountain House
	Struble Lake			
	Swan Lake	16	6	32 km NW of Ricinus
	Thompson Creek	59	10	84 km SW of Nordegg
	Upper Shunda Creek	-	10	3 km NW of Nordegg
Slave Lake	Fawcett Lake	20	20	27 km N of Smith
	Lawrence Lake	27	20	48 km NW of Athabasca
	North Wabasca	51	15	142 km N of Slave Lake
	Peerless Lake			164 km N & 77 km E of Slave Lake
Whitecourt	Freeman River	10	5	6 km S of Swan Hills
	Goose Lake			26 km N & 24 km E of Whitecourt
	Iosegun Lake	32	9	11 km N of Fox Creek
	Smoke Lake	42	12	13 km SW of Fox Creek
	Swan Hills	10	-	8 km W of Swan Hills
	Wolf Lake	27	5	58 km S&E of Edson

Table C4

GROUP CAMPGROUNDS

FOREST	NAME	SHELTER	WATER WELL	HORSE CORRALS
Bow/Crow	Cataract	X	X	
	Highwood	X	X	
	North Fork	X	X	X
	Ghost Airstrip	X	X	
	Oldman River		X	X
	Pine Grove	X	X	
	Sandy McNabb	X	X	X
	Syncline	X	X	
	Waiparous	X	X	
Rocky/ Clearwater	Cavalcade (Kootenay Plains)		X	
	Snow Creek	X		
	Upper Shunda	X	X	
	Prairie Creek	X	X	
	Chambers Creek	X	X	
Edson	Embarras River	X	X	
	Watson Creek		X	
	Hay River	X		
Peace River	Sulphur Lake	X		

Table C5

SUMMARY OF DEVELOPED RECREATION AREAS AND FACILITIES BY FOREST

FOREST	Campgrounds (Numbers)	FACILITIES				
		Camping Units	Day Use Units	Trails (km)	Group Camps	Staging Areas
Athabasca	7	60	28	50	--	--
Bow/Crow	22	1 123	340	752	9	20
Edson	17	418	185	30	3	--
Footner Lake	5	62	46	--	--	--
Grande Prairie	9	236	79	3	--	--
Lac La Biche	7	167	28	--	--	--
Peace River	5	52	43	--	1	--
Rocky/Clearwater	27	735	154	122	5	2
Slave Lake	4	142	50	--	--	--
Whitecourt	6	142	36	--	--	--
T O T A L	109	3 137	989	957	18	22

Note: In addition to the above developed recreation areas, there are 184 "H" and "R reservations held by AFS.

Administrative responsibility for the following Alberta Transportation campground was transferred to the AFS, effective May, 1980:

Lambert Creek
Coalspur
Obed Lake
Lovett River
Steen River
House River
Smoky River
Ironwood Lake
Pinehurst Lake
Ole's Lake
Laurence Lake
Meander River
Wandering River
Marianna Lakes
Freeman River

6. Geophysical

The timber damage assessment rate for new clearing in the Green Area increased t $181.70 per hectare. The rate for re-use of existing line increased to $41.99 pe hectare. These rates are established by the Timber Management Branch and are directl related to the average rate of timber dues for the previous year.

Table C6

EXPLORATION ACTIVITY FOR OIL AND GAS ON PUBLIC FOREST LANDS
1972-81 GEOPHYSICAL APPLICATIONS

Year	Preliminary Plans Approved (Number)	Line Cut (Kilometres)	Existing Lines in Use (Kilometres)
1972-73	273	3 605	3 513
1973-74	401	3 953	4 365
1974-75	205	2 554	2 541
1975-76	325	2 148	3 714
1976-77	387	5 786	5 641
1977-78	639	9 551	9 310
1978-79	743	11 076	10 796
1979-80	676	10 048	9 788
1980-81	643	16 333	13 681

7. Revenue

Timber damage assessments, forest protection levies and Crown dues amounted to approximately $468 000.00.

D. FOREST PROTECTION

1. Introduction

The 1980 fire season recorded the greatest number of fires within the last three decades. One thousand three hundred and forty eight fires burned 672 457 hectares. Lightning caused just under half the fires (45.2 percent). After a slow spring season, the fire action became hectic in July resulting in direct suppression costs in excess of twenty-six million dollars.

2. Fire Causes and Classification

Each fire is classified according to the area it burns. The following five classes are used: A - spot to .10 hectares, B - .10 hectares to 4 hectares, C - 4.1 hectares to 40 hectares, D - 40.1 hectares to 200 hectares, and E - over 200 hectares.

Table D1 shows the number of fires by class and cause and Table D2 shows the distribution per forest.

Table D1

FIRE CLASSIFICATION

Cause	Number by Class					
	A	B	C	D	E	Total
Recreation	107	26	2	2	0	137
Forest Industry	15	6	2	0	1	24
Settlement	43	86	52	16	2	199
Railroad	13	12	2	1	1	19
Lightning	302	218	48	15	26	609
Other Industries	45	35	9	5	4	98
Incendiary	30	50	29	6	5	120
Public Projects	3	2	3	1	0	9
Unclassified	54	35	10	6	3	108
Unknown	12	9	4	0	0	25
TOTAL	644	480	161	51	42	1 348

Table D2

FIRE-CLASS DISTRIBUTION
(For the Calendar Year 1980)

Forest	Class of Fire					Total
	A	B	C	D	E	
Athabasca	75	58	15	3	10	161
Bow/Crow	46	2	0	0	0	48
Edson	50	19	8	2	0	79
Footner Lake	69	98	27	15	7	206
Grande Prairie	30	24	5	3	0	62
Lac La Biche	83	70	33	7	10	203
Peace River	60	55	15	4	7	141
Rocky/Clearwater	26	10	1	0	0	37
Slave Lake	82	70	28	7	6	193
Whitecourt	60	37	10	5	0	112
TOTAL	571	443	142	46	40	1 242
Metis Colonies	4	4	2	0	0	10
Indian Reserves	24	13	4	4	0	45
Rural Area	15	20	13	1	2	51
GRAND TOTAL	614	480	161	51	42	1 348

Although the official fire season is considered to fall between April and October, minor fires do occur during the winter months. Table D3 shows the monthly distribution of fires by cause.

Table D3

MONTHLY DISTRIBUTION OF FIRES
(For Calendar Year 1980)

Cause	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Recreation	3	2	1	28	25	10	15	15	15	16	6	0
Forest Industry	0	1	3	5	5	2	1	0	5	1	1	0
Settlement	1	2	4	105	65	5	7	1	1	7	1	0
Railroad	0	0	0	4	12	2	0	0	0	0	1	0
Lightning	0	0	0	5	174	189	227	14	0	0	0	0
Other Industries	1	7	4	31	31	8	7	0	2	7	0	0
Incendiary	1	0	0	64	49	3	0	1	0	3	0	0
Public Projects	1	0	0	4	2	0	0	0	0	2	0	0
Unclassified	0	0	0	48	39	10	0	2	0	5	3	1
Unknown	0	0	0	10	10	0	3	0	0	2	0	0
TOTALS	7	12	12	304	412	229	260	33	23	43	12	1

Table D4
FIRE DISCOVERY AGENT

Cause	Discovered By				
	Tower	Public	Forest Officers	Aircraft	Other
Recreation	13	47	30	15	31
Forest Industries	5	9	1	3	6
Settlement	41	88	22	33	15
Railroads	4	4	2	2	7
Lightning	292	14	22	268	13
Other Industries	25	29	4	12	28
Incendiary	18	47	19	22	15
Public Projects	3	1	2	0	3
Unclassified	28	51	4	7	18
Unknown	4	11	4	1	5
TOTALS	433	301	110	363	141

3. Fire Damage

The following tables indicate the volume of wood lost to fire as well as the area of forest land burned.

Table D5

FIRE LOSSES BY CAUSE

Cause	Area Burned (Hectares)		
	Crown	Private	Total
Recreation	229	11	240
Forest Industry	735	6	741
Settlement	4 951	1 810	6 761
Railroads	633	55	688
Lightning	299 740	1	299 741
Other Industry	211 249	47	211 296
Incendiary	4 821	470	5 291
Public Projects	88	30	118
Unclassified	146 678	813	147 491
Unknown	35	55	90
TOTALS	669 159	3 298	672 457

Table D6

ANNUAL SUMMARY OF FOREST FIRE LOSSES (For Calendar Year 1981)

FOREST	LAND AFFECTED						VOLUME LOSS		TOTAL SUPPRESSION COSTS (Dollars)
	CROWN LAND				PRIVATE LAND (ha.)	TOTAL LAND AREA (ha.)	SAW TIMBER (M cubic metres)	OTHER (M cubic metres)	
	Merchant Timber (ha.)	Potential Product. (ha.)	Non-Product. (ha.)	Total (ha.)					
Athabasca	238 220	29 155	83 070	350 445	4	350 449	1 641 229	6 117 970	7 087 742
Bow/Crow	1	–	–	–	–	1	0	0	3 840
Edson	117	7	190	315	42	357	0	0	705 700
Footner Lake	10 417	11 044	1 961	23 422	448	23 869	230 157	427 575	4 322 658
Grande Prairie	79	4	80	163	263	426	0	0	292 222
Lac La Biche	68 288	1 179	86 694	156 161	426	156 587	162 925	3 164 902	4 435 256
Peace River	90 407	9 351	25 692	125 450	723	126 173	1 887 928	6 570 580	7 085 950
Rocky/Clearwater	8	–	–	8	38	47	0	0	16 747
Slave Lake	5 709	790	5 619	12 118	713	12 831	212 768	528 678	2 390 824
Whitecourt	51	15	11	77	449	526	0	0	208 262
TOTAL FORESTS	413 297	51 544	203 317	668 159	3 106	671 266	4 125 006	16 809 704	26 549 201
Metis Colonies	36	1	7	44	–	44	0	0	23 501
Indian Reserves	7	4	293	304	–	304	0	0	27 863
TOTAL PROTECTION AREA	413 340	51 550	203 617	668 507	3 106	671 613	4 125 006	16 809 704	26 600 565
TOTAL RURAL AREA	54	161	437	652	192	844	0	0	205 199
GRAND TOTAL	413 394	51 711	204 054	669 159	3 298	672 457	4 125 006	16 809 704	26 805 764
								Other fire related costs	16 435 613
								TOTAL	43 241 377

Table D7

TEN-YEAR COMPARISON OF FIRE CAUSES
(By Percentage)

Cause	1971	1972	1973	1981	1975	1976	1977	1978	1979	1980
Recreation	15.5	14.8	17.2	14.5	26.4	17.6	26.4	19.3	23.2	10.1
Settlement	12.0	11.4	15.3	5.5	11.4	13.4	10.4	7.4	4.3	14.8
Railroads	1.6	1.5	5.6	1.2	2.2	1.4	4.5	3.7	0.5	1.4
Lightning	47.3	43.7	26.6	46.2	29.3	23.8	23.7	42.4	51.8	45.2
Other Industries	4.0	4.3	7.5	4.5	3.2	6.1	9.4	6.0	5.3	7.3
Forest Industry	3.2	1.8	2.5	3.3	3.3	3.6	2.5	0.8	1.0	1.8
Incendiary	6.4	8.5	5.6	6.4	8.5	20.8	9.4	8.0	5.7	9.0
Public Projects	3.7	3.0	1.3	3.3	2.3	1.3	2.3	1.7	1.6	0.7
Unclassified	3.7	5.7	11.3	8.2	10.4	7.5	10.3	8.9	5.1	8.0
Unknown	2.6	5.3	7.1	6.9	3.0	4.4	1.1	2.0	1.5	1.9

Table D8

FIVE-YEAR SUMMARY — AIRCRAFT REPORT

All Aircraft	1976		1977		1978		1979		1980	
	No.	Hour	No.	Hour	No.	Hour	No.	Hour	No.	Hour
Helicopters	40	6 103	47	5 687	72	38 311	125	8 237	206	27 525
Fixed Wing	70	2 764	124	3 828	76	9 149	122	4 825	140	11 311
Air Tankers	11	1 073	10	658	11	5 281	17	1 633	48	4 415
TOTAL	121	9 940	181	10 173	159	52 741	264	14 695	394	43 251

Table D9

TEN-YEAR SUMMARY OF FIRES

Year	Total Fires	*Non-Forested (Hectares)	Forested (Hectares)	Total Area (Hectares)	Suppression Costs
1971	900	46 317	17 673	64 395	5 462 555
1972	737	11 364	37 925	29 290	5 179 163
1973	478	2 073	8 576	10 690	2 377 984
1974	598	2 299	15 689	18 392	5 619 951
1975	693	1 632	4 136	5 789	3 951 032
1976	774	5 313	17 124	22 473	3 681 894
1977	556	6 049	3 981	10 030	1 176 666
1978	653	5 017	2 773	17 790	2 787 901
1979	1 000	509	194 088	194 597	8 679 644
1980	1 348	204 054	465 105	669 159	26 805 764

E. FOREST RESEARCH

It has been recognized by the Alberta Government that research results are lacking in many areas of forest management which may hinder our progress toward more intensive forest management. As a result, a Forest Research Branch was created in April 1980 to carry out forest research or fund contract research in seven major areas: site classification, reforestation, growth and yield, tree physiology, genetics, land reclamation, range management and watershed management.

To date, only contracts and grants were used to conduct forest research as summarized in the following table.

Table E1

RESEARCH EXPENDITURES

Source of Funding	Number of Projects Funded	Total $ Expenditures
Forest Development Research Trust Fund	5	79 741
Research Contracts	19	189 127
TOTAL	24	268 868

Number/
Numéro

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FOREWORD

This report presents statistical detail pertaining to the activities of the Alberta Forest Service during the 1981-82 fiscal year. Summary tables are provided for comparative analysis and observations of trends. Industrial statistics are provided where they are helpful in obtaining a total provincial overview.

ACKNOWLEDGEMENTS

Tabular and graphic materials in this report were compiled by the respective branches of the Alberta Forest Service. Although monitoring of industrial reforestation activities is the responsibility of the Timber Management Branch, tabular data has been included in the Reforestation section of the report to provide a total reforestation overview.

A. TIMBER MANAGEMENT

1. Introduction

Timber production from public lands in 1981-82, excluding wood chips, totalled 5 564 270 cubic metres, an increase of 110 969 cubic metres from the previous year. Coniferous lumber and plywood logs accounted for 4 063 284 cubic metres as compared to 3 782 445 cubic metres produced in 1980-81.

2. Timber Management Planning

The total number of active timber dispositions for this year is 42 124. Timber licences and Commercial Timber Permits (CTP) account for 417 dispositions and Local Timber Permits (LTP) and tags account for 41 707. Table A1 summarizes the number of active timber dispositions over the past 10 years.

Table A1

TEN-YEAR SUMMARY — TIMBER DISPOSITIONS

Year	Miscellaneous and Local Timber Permits and Tags (Number)	Forest Management Agreements Timber Licences and Commercial Timber Permits (Number)
1972-73	2 881	633
1973-74	4 086	495
1974-75	13 199	522
1975-76	15 476	486
1976-77	15 282	456
1977-78	19 572	475
1978-79	26 842	391
1979-80	31 294	392
1980-81	44 787	401
1981-82	41 707	417

2. (a) Forest Management Agreements (FMAs)

Table A2 lists the companies that have entered into FMAs with the Province of Alberta. The Table shows the annual allowable cut (AAC) allocated under each agreement.

Table A2

FOREST MANAGEMENT AGREEMENTS
ACTIVE OPERATIONS

FOREST MANAGEMENT AGREEMENT HOLDER	Authorized Annual Cut	Management Plan Status
Procter and Gamble Cellulose Ltd. Grande Prairie, Alberta	1 246	Detailed FMA Plan Approved January 17, 1978.
St. Regis (Alberta) Ltd. Hinton, Alberta	1 052	Second detailed FMA Plan Approved in 1979.
Alberta Energy Company Blue Ridge, Alberta	467	Preliminary FMA Plan Approved January 17, 1978.
North Canadian Forest Products Ltd. Grande Prairie, Alberta	486	Detailed FMA Plan submitted March 1, 1981 and is under review
North Canadian Forest Products Ltd. (Dell Acres) Hines Creek, Alberta	9	Detailed FMA Plan Approved October 1, 1975.
British Columbia Forest Products Ltd. Whitecourt, Alberta	948	Preliminary FMA Plan Approved.
TOTAL	4 208	

2. (b) Coniferous Timber Quota Planning

Two quotas, one in the Athabasca Forest and one in the Lac La Biche Forest, were cancelled this year; one quota was granted in the Whitecourt Forest and two quotas were merged into one quota in the Slave Lake Forest. Table A3 lists the total number of coniferous quotas per forest.

Table A3
CURRENT CONIFEROUS TIMBER QUOTA STATUS
(On March 31, 1982)

Forest	Quota (Number)	Authorized Annual Allowable Cut (M cubic meters)
Athabasca	7	172
Bow/Crow	14	224
Edson	11	64
Footner Lake	10	482
Grande Prairie	1	70
Lac La Biche	5	98
Peace River	10	287
Rocky/Clearwater	29	163
Slave Lake	29	644
Whitecourt	24	534
TOTAL	140	2 738

2. (c) Deciduous Timber Allocations (DTA's)

Six DTA's were sold this year, two in each of the Edson, Whitecourt and Slave Lake Forests and one was granted in the Rocky/Clearwater Forest totalling 4 336 hectares of annual allowable cut.

Table A4
Deciduous Timber Allocations (DTAs)
(April 30, 1982)

Forest	Quotas (Number)	Authorized Annual Allowable Cut (hectares)
Edson	2	860
Rocky/Clearwater	1	186
Slave Lake	2	2 741
Whitecourt	2	549
TOTAL	7	4 336

3. Woods Operations

Timber harvesting operations on public land must be conducted in accordance with an approved operating plan (AOP). Field staff approved and/or checked 171 timber licence AOPs and commercial timber permit AOPs. Staff also conducted 2 377 woods inspections on the timber licence areas and on the commercial timber permit areas, related to the approved AOPs.

4. Scaling

The volume of weight scale sample loads of logs check-scaled by the Forest Service amounted to 19 681 cubic metres.

During the year, 199 scaling permits and 15 scaling licences were issued.

5. Timber Audits

A total of 70 audits of timber volumes produced by industry were completed during the year. These audits include quadrant cut-offs for 89 quotas.

Table A5
TIMBER DISPOSITIONS HANDLED

Disposition	Class	Granted	Sold	Not Sold	Total
Coniferous Timber Quota		1	-	-	1
Deciduous Timber Allocations		1	6	-	7
Licences	Coniferous - Quota	19	-	-	19
Commercial Timber Permits	Coniferous - Green	3	5	-	8
	Coniferous - Dead and Damaged	14	2	8	24
	Deciduous - Green	-	7	-	7
Local Timber Permits		-	2 078	-	2 078
Tree Tags		-	39 629	-	39 629
Custom Sawmill, Planer Mill or Timber Treating or Processing Plant Permits - Number		-	38		38

A total of 33 sales were advertised in 1981-82. 13 of these sales were for Coniferous Timber Permits or Deciduous Timber Allocations. The remaining 20 sales were for miscellaneous items such as Local Timber Permit draws or sales of seized wood.

Table A6

VOLUME AND VALUE OF TIMBER PRODUCTION ON PUBLIC LANDS

Product	Volume	Unit	Species	Unit Price $	Value $
Lumber and Plywood Logs	4 063 284	Cubic Metre	Coniferous	40.81	165 822 620
	131 706	Cubic Metre	Deciduous	27.96	3 682 500
Round Timber	141 747	Cubic Metre	Coniferous	79.50	11 268 886
	8 723	Cubic Metre	Deciduous	79.50	693 487
Pulpwood	1 111 539	Cubic Metre	Coniferous	16.62	18 473 778
	3 456	Cubic Metre	Deciduous	16.62	57 439
Wood Chips	859 625	Cubic Metre		11.43	9 825 514
Fuelwood	47 312	Cubic Metre	Coniferous	20.77	982 670
	38 229	Cubic Metre	Deciduous	20.77	794 016
Slabs	237	Cubic Metre	Coniferous	20.77	4 922
Railway Ties	17 817	Cubic Metre	Coniferous	64.41	1 147 593
Lath	220	Cubic Metre	Coniferous	454.55	100 001
Christmas Trees	47 495	Number	Coniferous	3.00	142 485
Trees for Transplanting	47 487	Number	Coniferous-Deciduous	2.00	94 974
				TOTAL	213 090 877

Table A7

TEN-YEAR SUMMARY — TIMBER PRODUCTS

Products	YEAR			
	1981-82	1980-81	1979-80	1978-79
Coniferous Lumber and Plywood Logs (M cubic metres)	4 063	3 782	3 911	2 936
Deciduous Lumber (M cubic metres)	132	106	18	25
Round Timber (cubic metres)	150 470	148 197	171 343	81 618
Pulpwood (M cubic metres)	1 115	1 326	1 587	1 547
Wood Chips (M cubic metres)	860	790	799	880
Fuelwood and Slabs (cubic metres)	85 778	66 484	64 490	60 417
Railway Ties (cubic metres)	17 817	23 520	13 663	21 702
Lath (cubic metres)	220	65	82	301
Christmas Trees (Number)	47 495	37 296	34 291	30 727
Trees for Transplanting (Number)	47 487	36 384	215 518	61 377
TOTAL* (M cubic metres)	5 564	5 452	5 765	4 672

*Excludes wood chips, christmas trees and trees for transplanting.

Table A7

TEN-YEAR SUMMARY — TIMBER PRODUCTS

YEAR					
1977-78	1976-77	1975-76	1974-75	1973-74	1972-73
2 884	2 579	2 142	1 704	2 932	2 700
13	30	26	51	47	86
226 560	169 920	84 960	141 600	84 960	84 960
1 651	1 581	1 731	2 212	1 906	1 006
538	317	161	240	331	59
48 140	50 547	12 035	12 035	9 628	19 256
27 528	35 224	48 396	33 744	14 652	28 120
1 319	-	606	887	1 294	1 434
23 902	17 702	18 367	16 737	7 820	17 580
28 507	37 644	17 059	16 201	2 441	5 141
4 852	4 446	4 045	4 156	4 996	3 925

Table A8

SUMMARY OF TIMBER OPERATIONS ON PUBLIC LANDS

PRODUCT	CLASS	UNIT	TIMBER DISPOSITIONS		
			F.M. AGREEMENTS TIMBER LICENCES COMMERCIAL PERMITS	LOCAL TIMBER PERMITS AND TAGS	TOTAL
Lumber and Plywood Logs	Coniferous	Cubic metres	3 882 543	180 741	4 063 284
	Deciduous	Cubic metres	115 054	16 652	131 706
Round Timber	Coniferous	Cubic metres	43 546	98 201	141 747
	Deciduous	Cubic metres	6	8 717	8 723
Pulpwood	Coniferous	Cubic metres	1 096 263	15 276	1 111 539
	Deciduous	Cubic metres	-	3 456	3 456
Fuelwood	Coniferous	Cubic metres	2 342	44 970	47 312
	Deciduous	Cubic metres	90	38 139	38 229
Slabs	Coniferous	Cubic metres	237	-	237
Railway Ties	Coniferous	Cubic metres	17 728	89	17 817
Lath	Coniferous	Cubic metres	-	220	220
*TOTAL VOLUME (excluding wood chips)		Cubic metres	5 157 809	406 461	5 564 270
Christmas Trees		Number	675	46 820	47 495
Trees for Transplanting		Number	-	47 487	47 487
Wood Chips		Cubic Metres	859 625	-	859 625

* TOTAL VOLUME does not include 2 641 cubic metres of wood products from Metis Colonies and 60 103 cubic metres of wood products from Federal Parks.

B. REFORESTATION AND RECLAMATION

1. Introduction

The Reforestation and Reclamation Branch is responsible for all Alberta Forest Service reforestation and reclamation projects, the provincial forest genetics and tree improvement program and the Pine Ridge Forest Nursery.

2. Reforestation

Regeneration surveys were conducted on 12 577 ha of which 77% was found satisfactorily stocked according to existing provincial standards (See Table B1).

Silviculture treatments completed by the Alberta Forest Service included mechanical scarification of 5 964 ha, seeding of 3 127 ha, planting of 5 495 ha, and thinning of 184 ha. Cone collection totalled 3 864 hl (10 626 bushels) for pine while no spruce cones were collected due to the very poor seed crop (Table B3).

In addition, reforestation work accomplished under the Maintaining Our Forests Afforestation Program, funded through the Heritage Savings Trust Fund includes: 57 437 ha of stocking surveys, 11 785 ha of land clearing, 5 153 ha of scarification, 184 ha of chemical site preparation, 1 604 ha of planting (2 998 793 trees) and 216.3 ha of thinning (Table B3).

3. Reclamation

During the year, the Branch successfully undertook 61 operational reclamation projects covering approximately 155 km of abandoned roads, trails and lines, and approximately 25 ha of other types of abandoned land disturbances such as sand and gravel pits, mill sites and well sites. The clean-up operation of the Brazeau Reservoir continued with work carried out including the removal of standing dead trees, snags and stumps, and piling and burning. The work in the reservoir has further improved its recreational potential and its scenic attraction.

A set of field trials to study the adaptability of selected native and exotic woody species on oil sands mine wastes was established. Ongoing studies include methods of minimizing erosion, seeding methods of native grasses, fertilization, and species adaptability on abandoned land disturbances. Work on the collection of native woody species from the Eastern Slopes and studies of pretreatment requirement for germination, and progagation methods continued. This project was in the initial stages of being extended to include the oil sands area as a joint government and industry effort.

4. Genetics and Tree Improvement

The joint Alberta Forest Service-industry genetics and tree improvement program continued with final agreements signed with British Columbia Forest Products Ltd., Canadian Forest Products Ltd. and Procter and Gamble Cellulose Ltd. As part of the co-operative tree breeding program, four lodgepole pine progeny test plantations were established and 23 superior white spruce trees were selected in northwestern Alberta.

Seven research plantations were established at various locations throughout the province and site development and fencing of nine experimental areas was completed. A 30 ha experimental area was developed, fenced and irrigation extended to provide for establishment of a seed orchard and genetics research plantations at the Pine Ridge Forest Nursery. Stock from 27 tree species was raised for planting of research arboretum. Thirty-one new seedlots were added to the genetics seed bank and 502 seedlots were germination tested. Experimental planting stock production consisted of 9 704 seedlings and 535 grafts. Several studies on vegetative propagation, pollen handling and cultural techniques for plant propagation were continued or completed.

Funding through the Alberta Heritage Savings Trust Fund allowed for an expanded program in genetics and tree improvement during the year.

5. Pine Ridge Forest Nursery

Expansion of the Pine Ridge Forest Nursery facilities to allow higher seedling production was started in the 1981/82 fiscal year. The first stage in this expansion was the construction of a new shade frame area to facilitate double cropping of the greehouse.

The Research and Investigations Section continued to provide technical assistance in developing production techniques and procedures in the bareroot and container seedling production functions.

The Seed Program processed 6 056 hl of pine cones and only 3.3 hl of spruce cones in 1981/82. The total seed inventory was reduced by 4 964 kg to 36 708 kg.

The Containerized Seedling Program continued with an increase in production of 13 300 238 seedlings; 8 701 190 seedlings were shipped to reforestation sites for planting.

The Bareroot Seedling Program continued to expand during 1981/82. An inventory of 18 010 "1-0" seedlings increased the overall inventory to 40 203 636 seedlings. 9 007 410 bareroot seedlings were lifted and 6 187 503 were shipped for planting.

Table B1

REGENERATION SURVEYS
1981-82

FOREST	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (Hectares)
	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	
Athabasca	354	338	692	-	-	-	692
Bow/Crow	1 252	480	1 732	217	33	250	1 982
Edson	149	312	461	4 605	1 836	6 441	6 902
Footner Lake	2 274	599	2 873	1 447	264	1 711	4 584
Grande Prairie	1 050	165	1 215	5 047	1 206	6 253	7 468
Lac La Biche	646	40	686	9	0	9	695
Peace River	546	47	593	220	72	292	885
Rocky/Clearwater	745	407	1 152	426	128	554	1 706
Slave Lake	2 182	416	2 598	826	86	912	3 510
Whitecourt	503	70	573	1 465	43	1 508	2 081
TOTAL	9 701	2 874	12 575	14 262	3 668	17 930	30 505

Table B2

TEN-YEAR SUMMARY — REGENERATION SURVEYS
1972-1982

YEAR	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (Hectares)
	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	Stocked (Hectares)	Non-Stocked (Hectares)	Total Surveyed (Hectares)	
1972-73	6 187	7 846	14 033	5 853	5 556	11 409	25 442
1973-74	10 422	15 245	25 667	9 669	7 391	17 060	42 726
1974-75	6 541	3 404	9 945	10 113	7 495	17 608	27 553
1975-76	12 750	6 091	18 841	10 788	5 401	16 189	35 030
1976-77	11 055	6 226	17 281	8 715	8 197	17 012	34 293
1977-78	10 114	8 841	18 955	7 295	9 702	16 998	35 953
1978-79	10 271	2 696	12 967	12 126	8 779	20 905	33 872
1979-80	10 315	3 154	13 469	13 620	6 938	20 558	34 027
1980-81	8 322	1 614	9 936	17 237	6 083	23 321	33 257
1981-82	9 701	2 874	12 575	14 262	3 668	17 930	30 505

Table B3

REFORESTATION WORK CONDUCTED BY THE ALBERTA FOREST SERVICE
1981-82

FOREST	Scarification (Hectares)	Seeding (Hectares)	CONES COLLECTED			Thinning (Hectares)	SEEDLINGS PLANTED	
			Pine (Hecto-litres)	Spruce (Hecto-litres)	Other (Hecto-litres)		Conventional (Number)	Container (Number)
Athabasca	114	---	7	---	---	---	225 859	478 294
Bow/Crow	1 266	448	1 231	---	---	---	561 282	---
Edson	386	---	7	---	---	229	541 274	---
Footner Lake	668	---	---	---	---	---	772 075	---
Grande Prairie	336	733	2 090	---	---	---	553 580	178 200
Lac La Biche	---	---	---	---	---	---	668 579	115 958
Peace River	136	---	---	---	---	---	372 300	69 486
Rocky/Clearwater	992	324	529	---	---	22	222 200	52 770
Slave Lake	1 399	1 622	---	---	---	---	1 741 535	612 355
Whitecourt	667	---	---	---	---	---	282 465	739 624
TOTAL	5 964	3 127	3 864	---	---	251	5 941 149	2 246 687

* One hectolitre of spruce cones yields approximately 1.168 kg of seed and one hectolitre of pine cones yields approximately 0.312 kg of seed.

Table B4

REFORESTATION BY FOREST INDUSTRIES IN ALBERTA
1981-82

Forest	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional (Number)	Container (Number)
Athabasca	170	10	-	-	-
Bow/Crow	105	-	-	-	85 800
Edson	3,216	-	379	-	2 850 000
Footner Lake	1	1	-	-	30 000
Grande Prairie	1,239	556	-	-	1 732 240
Lac La Biche	-	-	-	-	-
Peace River	516	283	-	-	854 700
Rocky/Clearwater	94	-	-	135 000	127 600
Slave Lake	3,863	461	-	-	406 120
Whitecourt	1,396	260	4	7 500	397 700
TOTAL	10,600	1 573	383	142 500	6 484 160

Table B5

TEN-YEAR SUMMARY — REFORESTATION BY THE ALBERTA FOREST SERVICE
1972-1982

Year	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1972-73	6 979	4 701	100	333 412	1 127 373
1973-74	6 594	1 332	108	*1 228 392	1 334 588
1974-75	6 296	2 047	72	**1 140 705	1 224 396
1975-76	6 697	1 885	104	***943 702	3 514 664
1976-77	4 757	2 898	546	****827 520	2 294 659
1977-78	6 684	4 782	111	224 478	2 378 730
1978-79	10 152	4 654	11	94 118	2 080 885
1979-80	6 324	3 325	16	-	4 898 809
1980-81	6 102	4 687	-	769 200	3 753 887
1981-82	5 964	3 127	184	5 941 149	2 246 687

* Includes 50 800 Wildlings Planted
** Includes 26 000 Wildlings Planted
*** Includes 82 032 Wildlings Planted
**** Includes 137 776 Wildlings Planted

Table B6

TEN-YEAR SUMMARY — REFORESTATION BY FOREST INDUSTRIES
1972-1982

Year	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1972-73	5 501	1 745	--	40 000	929 244
1973-74	6 793	1 939	--	* 64 070	957 594
1974-75	6 334	2 313	--	** 140 462	3 129 239
1975-76	10 840	2 862	40	1 329 364	1 732 820
1976-77	9 849	3 427	37	103 675	3 284 978
1977-78	10 292	5 328	20	--	4 253 860
1978-79	10 244	2 852	234	44 500	6 164 579
1979-80	8 819	2 218	256	--	5 430 000
1980-81	6 483	1 947	215	30 250	6 773 830
1981-82	7 604	1 573	383	142 500	6 484 160

* Includes 8 500 Wildlings Planted
** Includes 3 000 Wildlings Planted

Table B7

SUMMARY OF MAINTAINING OUR FORESTS
REFORESTATION FIELD WEEK
1981-82

Forest	SITE PREPARATION		PLANTING		CONE COLLECTION			Thinning (ha.)
	Land Clearing (ha.)	Scarification (ha.)	Conventional (Number)	Container (Number)	Pine *(hl.)	Spruce (hl.)	Other Specify (hl.)	
Edson	--	--	--	--	--	--	--	--
Footner Lake	2 342	506	--	1 478 237	--	--	--	--
Lac La Biche	2 217	1 628	--	490 142	--	--	--	--
Peace River	4 124	1 757	--	1 030 414	--	--	--	--
Slave Lake	3 102	1 262	--	--	--	--	--	--
Rocky/Clearwater	--	--	--	--	--	--	--	149
TOTAL	11 785	5 153	--	2 998 793	--	--	--	149

*Hectolitre (hl) - one hectolitre is approximately equivalent to 2.75 bushels.

Table B8

MAINTAINING OUR FORESTS
REGENERATION SURVEYS
1981-82

Forest	STOCKING SURVEYS		
	Aerial Recon. (ha.)	Ground Recon. (ha.)	Ground Intensive (ha.)
Footner Lake	--	--	3 664
Lac La Biche	12 011	2 582	571
Peace River	9 550	12 000	207
Slave Lake	10 131	--	6 721
TOTAL	31 692	14 582	11 163

Table B9

PINE RIDGE FOREST NURSERY SEED PROGRAM

Pine	1979-80	1980-81	1981-82
Cones received (hl)	7 277	6 080	5 458
Cones processed (hl)	7 277	6 080	6 056
Seed cleaned (kg)	4 623	1 647	1 589
Seed stored (kg)	9 906	10 318	8 293
Spruce	**1979-80**	**1980-81**	**1981-82**
Cones received (hl)	15 359	2 309	3
Cones processed (hl)	15 359	2 309	3
Seed cleaned (kg)	25 084	2 843	1
Seed stored (kg)	35 697	31 184	28 415

Table B10

PINE RIDGE FOREST NURSERY
BAREROOT AND CONTAINER SEEDLING PROGRAM

Program	1979-80		1980-81		1981-82	
	Pine	Spruce	Pine	Spruce	Pine	Spruce
BAREROOT PROGRAM						
Seedlings grown:						
Age 0 - 1.0 years	300 000	6 300 000	1 695 720	12 427 440	700 000	17 310 000
Age 1.0 - 2.0 years	800 000	5 900 000	844 670	6 087 848	1 436	9 301 500
Age 2.0 - 3.0 years	---	---	---	3 668 673	1 599 900	11 290 800
Seedlings lifted	115 000	---	1 254 558	2 701 967	1 237 555	7 769 855
Seedlings Shipped	---	---	895 333	34 064	474 225	5 713 278
CONTAINER PROGRAM						
Seedlings grown	3 900 000	9 300 000	1 810 000	9 765 000	255 800	13 044 438
Seedlings Shipped	2 300 612	8 002 000	2 967 000	9 479 000	951 961	7 749 229

C. FOREST LAND USE

1. Introduction

The following information pertains to forest land use activities of the Alberta Forest Service.

2. Grazing

The Alberta Forest Service managed 544 grazing dispositions outside the Rocky Mountain Forest Reserve as follows:

	Dispositions	Acreage	AUM'S
Leases	398	451 050	98 410
Permits	76	28 539	6 776
Licenses	52	51 447	8 451
Head Tax	18	139 390	18 224
TOTAL	544	670 426	131 861

In the Rocky Mountain Forest Reserve, the number of Animal-Unit- Months (AUM) of grazing utilized was 74 253 AUM from total available of 80 797 AUM. A total of 23 937 head of adult livestock grazed on 87 allotments. The revenue collected was $171 052.86 from 269 permits which were issued.

3. Petroleum and Natural Gas

A decreased use of forest lands by the petroleum and natural gas industry was evidenced by a 17% decrease in applications processed for land surface rights. Table C1 shows the applications processed by Forest, for the last five years.

Table C1

APPLICATIONS PROCESSED FOR LAND SURFACE RIGHTS FOR THE PETROLEUM AND NATURAL GAS INDUSTRY

FOREST	1981-82	1980-81	1979-80	1978-79	1977-78
Athabasca	147	179	98	60	47
Bow/Crow	63	83	111	128	81
Edson	260	310	413	128	167
Footner Lake	254	210	345	287	259
Grande Prairie	321	402	628	338	196
Lac La Biche	448	607	458	428	363
Peace River	298	245	239	320	351
Rocky/Clearwater	148	183	374	283	266
Slave Lake	456	625	672	491	413
Whitecourt	354	483	721	655	485
TOTAL	2 749	3 327	4 059	3 118	2 628

In addition, 886 amendments and a total of 279 Sand and Gravel Dispositions and Miscellaneous Permits and Leases were approved. In addition, numerous holdings, land use restrictions and administrative reservations were processed.

Timber Damage assessments on Land Dispositions - timber damage assessments were computed on 2 818 dispositions in 1981-82.

4. Watershed Management

As part of a continuing inventory program of precipitation and streamflow, a data network has been established. A total of 137 precipitation storage gauges and 20 water level recorders were collecting data in the Green Area in 1981-82.

Table C2

PRECIPITATION AND STREAMFLOW NETWORK

FOREST	NUMBER OF PRECIPITATION GAUGES	FREQUENCY OF READING	NUMBER OF WATER LEVEL RECORDERS
Athabasca	1	semi-annually	
Bow/Crow	46	10 monthly 36 semi-annually	3
Edson	18	11 semi-annually 7 monthly in Tri-Creeks	5
Footner Lake	4	semi-annually	
Grande Prairie	20	semi-annually	5
Lac La Biche	2	semi-annually	
Peace River	2	semi-annually	
Rocky/Clearwater	22	3 monthly 19 semi-annually	2
Slave Lake	11	semi-annually	2
Whitecourt	11	semi-annually	3

5. Forest Recreation

A total of $1.13 million was spent on new construction and upgrading in 1981-82, broken down as follows:

Expansion and Upgrading: $730 000

Crowsnest Pass Recreation Program
Chambers Creek Recreation Area
Shunda Beaverdam Recreation Area
Brazeau Reservoir Recreation Area
Swan Lake Recreation Area
Ram Falls Recreation Area
Thompson Creek Recreation Area
Medicine Lake Recreation Area
Prairie Creek Recreation Area
Wolf Lake Recreation Area
Goose Lake Recreation Area
Josegun Lake Recreation Area
Smoke Lake Recreation Area
Swan Hills Recreation Area
Freeman River Recreation Area
Fawcett Lake Recreation Area

New Construction: $400 000

Cache Hill Recreation Area
Cartier Creek Recreation Area
Hornbeck Cross-Country Ski Trail
Machesis Lake Recreation Area
Shuttler Flats Group Camp
Rock Island Lake Recreation Area
Shunda Beaverdam Overflow Area
Headwaters Trail
Minnow Lake Group Camp

The Alberta Forest Service continued to provide camping facilities for individuals seeking a more primitive recreational experience than that provided by the National and Provincial Parks Campgrounds.

Accommodations at A.F.S. Recreation Areas include universal campsites which will accomodate a wide range of camping equipment, each containing a picnic table and fireplace. Drinking water is supplied by hand pumps and toilets are the pit privy type. Firewood is supplied. Individual unit services or hookups are not provided. Several recreation areas are located on lakes which allow motorized boating. Where this is the case, the recreation area also provides a boat launch.

Table C3

LIST OF FOREST RECREATION AREAS AND CAMPING UNITS AVAILABLE

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Athabasca	Cascade Rapids Remote	11	-	92 km E of Ft. McMurray
	Clausen's Landing Remote	4	-	115 km N of Ft. McMurray
	Dore Lake	12	10	15 km N of Ft. Chipewyan
	Engstrom Remote	2	-	73 km E of Ft. McMurray
	Magua Lake	22	18	40 km S of Ft. McMurray
	Miseieutin Remote	3	-	52 km E of Ft. McMurray
	Whitemud Falls Remote	4	-	109 km E of Ft. McMurray
	T O T A L	58	28	
Bow/Crow	Allison Day Use	-	10	9 km NW of Crowsnest
	Allison Chinook X-C Skiing	-	20	9 km NW of Crowsnest
	Beaver Mines Lake	55	20	30 km S of Crowsnest
	Bluerock	91	2	45 km W of Turner Valley
	Burnt Timber	18	10	65 km SW of Sundre
	Canyon Creek	-	-	23 km SW of Bragg Creek
	Cartier Creek	-	60	22 km SW of Sundre
	Castle Falls	49	4	15 km S of Crowsnest
	Castle River Bridge	30	50	12 km S of Crowsnest
	Cat Creek Day Use	-	13	45 km SW of Longview
	Cataract Creek	102	14	50 km SW of Longview
	Chinook	62	10	12 km NW of Crowsnest
	Deer Creek Day Use	-	10	45 km SW of Sundre
	Dutch Creek	41	7	30 km NE of Crowsnest
	Etherington Day Use	-	100	45 km SW of Longview
	Fallen Timber	71	20	70 km NW of Cochrane
	Gorge Creek Day Use	-	16	30 km W of Turner Valley
	Indian Grave	28	4	40 km S of Longview
	James - Wilson	15	15	40 km W of Sundre
	Livingstone Falls	23	7	60 km N of Crowsnest
	Lynx Creek	30	5	20 km S of Crowsnest

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Bow/Crow	North Fork	24	10	15 km W of Millarville
	North Ghost	175	8	70 km NW of Cochrane
	Oldman River	12	-	40 km N of Crowsnest
	Racehorse	38	5	25 km N of Crowsnest
	Red Deer River	66	12	55 km SW of Sundre
	Sandy McNabb	98	36	25 km W of Turner Valley
	Sheep Falls Day Use	-	8	40 km W of Turner Valley
	Sibbald Flats	134	15	15 km S of Morley
	South Ghost Snowmobile	-	20	43 km NW of Cochrane
	Syncline X-C Skiing	-	30	20 km S of Crowsnest
	Waiparous Creek	36	10	65 km NW of Cochrane
	Waiparous Valley Viewpoint	-	10	64 km NW of Cochrane
	Wildhorse	-	9	70 km W of Sundre
	T O T A L	1 198	570	
Edson	Big Berland	18	11	70 km NW of Hinton
	Cardinal River Divide	-	2	90 km SE of Hinton
	Cardinal River	15	-	91 km SE of Hinton
	Coalspur	12	8	10 km S of Robb
	Eccles Pond Day Use	-	8	60 km W of Edson
	Emerson Lakes	8	8	56 km NE of Hinton
	Fairfax Lake	-	8	105 km S of Edson
	Fickle Lake	35	16	39 km SW of Edson
	Grande Cache (Blue Bridge)	22	10	1 km N of Grande Cache
	Grande Cache Lake Day Use	-	15	2 km N of Grande Cache
	Kinky Lake	10	-	20 km NW of Hinton
	Lambert Creek	8	-	30 km S of Edson
	Little Sundance Creek	6	18	13 km W of Edson
	Lovett River	16	-	30 km SE of Coalspur

Table C3 (cont'd)

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Edson	Mason Creek Day Use	-	16	28 km E of Mayerthorpe
	McLeod River	21	6	26 km SE of Hinton
	Obed Lake	15	-	40 km W of Edson
	Pembina Forks	17	4	109 km S of Edson
	Pierre Grey's Lakes	65	10	93 km NW of Hinton
	Pierre Grey's X-C Skiing	-	35	93 km NW of Hinton
	Rock Lake	67	20	42 km NW of Hinton
	Watson Creek	40	-	112 km SW of Edson
	Whitehorse Creek	12	-	122 km SW of Edson
	Wildhorse Lake	13	20	25 km SW of Hinton
	T O T A L	400	215	
Footner Lake	Buffalo River Day Use	-	6	24 km SW of Rainbow Lake
	Buffalo Tower Day Use	-	4	50 km S of Ft. Vermilion
	Hut Lake	12	14	36 km SE of High Level
	Machesis Lake	22	8	60 km SE of High Level
	Meander River	6	4	80 km N of High Level
	Rainbow Lake	14	12	65 km S of Rainbow Lake
	Steen River	10	4	150 km N of High Level
	Tall Cree Crossing	10	2	60 km SE of Ft. Vermilion
	Thurston Lake Remote	3	-	172 km NW of High Level
	T O T A L	77	54	
Grande Prairie	Bison Flats	21	10	160 km SE of Grande Prairie
	Cut Bank River	5	-	100 km S of Grande Prairie
	Economy Lake	6	12	38 km S of Goodwin
	Hilltop Lake	15	-	26 km SW of Woking

Table C3 (cont'd)

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Grande Prairie	Musreau Lake	83	-	80 km S of Grande Prairie
	Nose Lake Remote	10	5	80 km NW of Grande Cache
	Shuttler Flats	25	5	65 km SW of Grande Prairie
	Simonette River	24	35	19 km SW of Debolt
	Smoky River	5	25	35 km E of Grande Prairie
	Two Lakes	75	35	114 km S&W of Grande Prairie
	Waskahigan	15	20	3 km NW of Little Smoky
	Westview	4	4	100 km NW of Grande Prairie
	T O T A L	288	151	
Lac La Biche	Calling River	4	7	40 km E of Calling Lake
	Crow Lake Remote	13	2	130 km S of Ft. McMurray
	House River I	-	6	55 km N of Wandering River
	House River II	-	6	70 km N&W of Wandering River
	Ironwood Lake Day Use	-	15	58 km SE of Lac La Biche
	Jackson Lake Trail Staging Area	-	6	35 km E of Lac La Biche
	Lac La Biche River	-	5	50 km Downstream of Athabasca
	Mariana Lake	5	10	90 km S of Ft. McMurray
	May Lake	10	10	30 km N&W of Cold Lake
	Pinehurst Lake	10	31	68 km E&S of Lac La Biche
	Seibert Lake	34	12	77 km N&W of Bonnyville
	Tanasiuk	20	10	130 km N of Athabasca
	Touchwood Lake	32	19	46 km E&N of Lac La Biche
	Wandering River	14	4	10 km N of Wandering River
	Wolf Lake	49	12	56 km N&W of Bonnyville
	T O T A L	191	155	

Table C3 (cont'd)

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Peace River	Notikewin	10	-	90 km N of Hines Creek
	Oles Lake	6	9	86 km W of Hines Creek
	Running Lake	11	20	70 km N&W of Hines Creek
	Stoney Lake	13	6	32 km N of Hines Creek
	Sulphur Lake	12	8	78 km N&W of Hines Creek
	T O T A L	52	43	
Rocky Clearwater	Blackstone	10	4	25 km N of Nordegg
	Blackstone Viewpoint	-	-	25 km N of Nordegg
	Brazeau Reservoir	41	11	25 km SW of Lodgepole
	Brazeau River	12	6	63 km N of Nordegg
	Brown Creek	13	5	40 km N of Nordegg
	Brown Creek Viewpoint	-	-	40 km N of Nordegg
	Chambers Creek	17	6	30 km W of Rocky Mountain House
	Chambers Creek Group Camp/ Snowmobile Staging Area	-	20	30 km W of Rocky Mountain House
	Crescent Falls	5	-	13 km SW of Nordegg
	Elk Creek	14	5	65 km S of Nordegg
	Elk River	13	-	73 km N of Nordegg
	Fish Lake	100	10	5 km W of Nordegg
	Gold Eye Lake	44	-	8 km W of Nordegg
	Harlech	10	7	15 km E of Nordegg
	Haven Creek	8	6	11 km W of Nordegg
	Jackfish Lake	5	-	45 km W of Rocky Mountain House
	Kootenay Plains (Two O'Clock Creek)	20	6	64 km W of Nordegg
	Medicine Lake	39	15	37 km NW of Rimbey
	Mitchell Lake	3	-	27 km S of Rocky Mountain House
	North Ram River	10	6	29 km S of Nordegg
	Peppers Lake	10	6	70 km S of Nordegg
	Phyllis Lake	8	-	16 km W of Caroline
	Pinto Lake Remote	6	-	Backcountry Site
	Prairie Creek	47	6	32 km SW of Rocky Mountain House

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Rocky Clearwater	Ram Falls	24	30	50 km S of Nordegg
	Seven Mile	38	6	66 km NW of Ricinus
	Shunda	6	12	3 km E of Nordegg
	Shunda Beaver Dam Overflow	87	-	3 km E of Nordegg
	South Prairie Creek	8	-	28 km SW of Rocky Mountain House
	Strachan	24	14	19 km SW of Rocky Mountain House
	Struble Lake (Water Access Point)	-	-	30 km S of Rocky Mountain House
	Swan Lake	16	6	32 km NW of Ricinus
	Thompson Creek	59	10	84 km SW of Nordegg
	Upper Shunda Creek	-	10	3 km NW of Nordegg
	T O T A L	697	207	
Slave Lake	East Peerless Lake	20	-	240 km N&E of Slave Lake
	Fawcett Lake	20	20	27 km N of Smith
	Lawrence Lake	27	20	48 km NW of Athabasca
	North Wabasca	51	15	142 km N of Slave Lake
	Sandy Lake (Water Access Point)	-	-	60 km SE of Wabasca
	T O T A L	118	55	
Whitecourt	Freeman River	10	5	6 km S of Swan Hills
	Iosegun Lake	32	9	11 km N of Fox Creek
	Smoke Lake	42	12	13 km SW of Fox Creek
	Swan Hills	10	-	8 km W of Swan Hills
	Wolf Lake	27	5	58 km S&E of Edson
	T O T A L	121	31	

Table C4

GROUP CAMPGROUNDS

FOREST	NAME	SHELTER	WATER WELL	HORSE CORRALS	LOCATION
Bow/Crow	Ghost Airstrip	X	X		60 km N&W of Cochrane
	Highwood	X	X		35 km SW of Longview
	North Fork (Equestrian)	X	X	X	15 km W of Millarville
	Oldman River(Equestrian)	X	X	X	40 km N of Crowsnest
	Pine Grove A	X	X		50 km W&S of Calgary
	Pine Grove B	X	X		50 km W&S of Calgary
	Sandy McNabb A	X	X	X	25 km W of Turner Valley
	Sandy McNabb B	X	X		25 km W of Turner Valley
	Syncline A	X	X		20 km S of Crowsnest
	Syncline B	X	X		20 km S of Crowsnest
	Waiparous	X	X		65 km NW of Cochrane
Edson	Embarras River	X	X		37 km SW of Edson
	Hay River	X			30 km NW of Hinton
Grande Prairie	Shuttler Flats	X	X		65 km SW of Grande Prairie
Peace River	Sulphur Lake	X	X		78 km NW of Hines Creek
Rocky/ Clearwater	Cavalcade A		X		64 km W of Nordegg
	Cavalcade B		X		64 km W of Nordegg
	Cavalcade C		X		64 km W of Nordegg
	Chambers Creek	X	X		30 km W of Rocky Mtn. House
	Prairie Creek	X	X		32 km SW of Rocky Mtn. House
	Snow Creek	X			13 km W of Nordegg
	Upper Shunda	X	X		3 km SW of Nordegg

Table C5

SUMMARY OF DEVELOPED RECREATION AREAS AND FACILITIES BY FOREST

FOREST	Auto-Access Campgrounds (Numbers)	FACILITIES					
		Camping Units	Day Use Units	Group Camps	Remote/ Primitive Camps	Random Overflow Areas	Trails (km)
Athabasca	2	58	28	--	5	-	50
Bow/Crow	21	1 198	570	11	4	-	900
Edson	20	400	215	2	-	-	380
Footner Lake	5	77	54	--	2	-	-
Grande Prairie	12	288	151	1	2	-	5
Lac La Biche	10	191	155	--	1	-	-
Peace River	5	52	43	1	-	-	-
Rocky/Clearwater	28	687	200	7	2	4	190
Slave Lake	4	118	55	--	-	1	-
Whitecourt	5	121	31	--	-	-	5
T O T A L	112	3 190	1 502	22	16	5	1 530

Note: Funds for operation and maintenance of the above recreation developments totalled roughly $2.1 million.

6. Geophysical

The timber damage assessment rate for new clearing in the Green Area increased to $214.03 per hectare. The rate for re-use of existing line increased to $46.19 per hectare. These rates are established by the Timber Management Branch and are directly related to the average rate of timber dues for the previous year.

Table C6

EXPLORATION ACTIVITY FOR OIL AND GAS ON PUBLIC FOREST LANDS
1972-82 GEOPHYSICAL APPLICATIONS

Year	Preliminary Plans Approved (Number)	Line Cut (Kilometres)	Existing Lines in Use (Kilometres)
1972-73	273	3 605	3 513
1973-74	401	3 953	4 365
1974-75	205	2 554	2 541
1975-76	325	2 148	3 714
1976-77	387	5 786	5 641
1977-78	639	9 551	9 310
1978-79	743	11 076	10 796
1979-80	676	10 048	9 788
1980-81	643	16 333	13 681
1981-82	659	14 644	14 078

Seismic activity declined slightly from the previous year.

7. Revenue

Timber damage assessments, forest protection levies and Crown dues amounted to approximately $468 054.55.

D. FOREST PROTECTION

1. Introduction

The 1981 fire season recorded the greatest number of fires within the last three decades. One thousand five hundred and twenty two (1,522) fires burned 1 365 584 hectares. Lightning caused over half the fires (55.4 percent). After a slow spring season, the fire action became hectic in July resulting in direct suppression costs in excess of thirty-seven million dollars.

2. Fire Causes and Classification

Each fire is classified according to the area it burns. The following five classes are used: A - spot to .10 hectares, B - .10 hectares to 4 hectares, C-4.1 hectares to 40 hectares, D-40.1 hectares to 200 hectares, and E - over 200 hectares.

Table D1 shows the number of fires by class and cause and Table D2 shows the distribution per forest.

Table D1

FIRE CLASSIFICATION

Cause	Number by Class					
	A	B	C	D	E	Total
Recreation	184	31	7	1	1	224
Forest Industry	12	4	1	0	0	17
Settlement	46	48	25	10	4	133
Railroad	10	9	2	0	0	21
Lightning	490	267	54	11	22	844
Other Industries	41	12	3	0	0	57
Incendiary	35	18	10	4	1	68
Public Projects	14	4	2	2	0	23
Unclassified	67	26	3	2	0	98
Unknown	19	14	3	1	0	37
TOTAL	918	433	112	31	28	1 522

Table D2

FIRE-CLASS DISTRIBUTION
(For the Calendar Year 1981)

Forest	Class of Fire					Total
	A	B	C	D	E	
Athabasca	94	71	17	4	9	195
Bow/Crow	32	3	0	1	0	36
Edson	56	13	4	1	0	74
Footner Lake	82	85	18	5	7	197
Grande Prairie	111	26	8	2	0	147
Lac La Biche	130	74	21	6	4	235
Peace River	88	27	10	4	2	131
Rocky/Clearwater	36	3	0	0	0	39
Slave Lake	117	71	16	5	6	215
Whitecourt	139	38	9	1	0	187
TOTAL	885	411	103	29	28	1 456
Metis Colonies	9	4	1	1	0	15
Indian Reserves	16	12	6	0	0	34
Rural Area	8	6	2	1	0	17
GRAND TOTAL	918	433	112	31	28	1 522

Although the official fire season is considered to fall between April and October, minor fires do occur during the winter months. Table D3 shows the monthly distribution of fires by cause.

Table D3

MONTHLY DISTRIBUTION OF FIRES
(For Calendar Year 1981)

Cause	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Recreation	2	2	2	8	29	12	13	38	53	43	19	3
Forest Industry	0	0	2	2	1	3	1	3	4	0	1	0
Settlement	1	2	2	14	34	10	21	37	9	2	1	0
Railroad	0	0	0	2	8	5	4	2	0	0	0	0
Lightning	0	0	0	0	45	114	262	371	51	1	0	0
Other Industries	1	3	2	9	7	5	9	9	8	0	2	2
Incendiary	0	0	0	9	25	2	2	19	10	1	0	0
Public Projects	0	1	0	0	1	0	1	8	4	2	4	2
Unclassified	0	0	3	11	23	7	15	28	9	2	0	0
Unknown	0	0	1	0	12	3	2	16	2	1	0	0
TOTALS	4	8	12	55	185	161	330	531	150	52	27	7

Table D4

FIRE DISCOVERY AGENT

Cause	Discovered By				
	Tower	Public	Forest Officers	Aircraft	Other
Recreation	24	96	25	21	58
Forest Industries	4	7	2	1	3
Settlement	44	47	11	22	9
Railroads	4	5	2	2	8
Lightning	401	36	37	340	30
Other Industries	12	17	3	8	17
Incendiary	14	26	3	14	11
Public Projects	1	10	2	3	7
Unclassified	18	50	3	11	16
Unknown	12	15	2	3	5
TOTALS	534	309	90	425	164

3. Fire Damage

The following tables indicate the volume of wood lost to fire as well as the area of forest land burned.

Table D5

FIRE LOSSES BY CAUSE

Causes	Area Burned (Hectares)		
	Crown	Private	Total
Recreation	623	22	645
Forest Industry	19	0	19
Settlement	372	1 619	1 991
Railroads	3	28	31
Lightning	1 360 226	2	1 360 228
Other Industry	68	1	69
Incendiary	1 813	168	1 981
Public Projects	246	0	246
Unclassified	180	16	196
Unknown	162	16	178
TOTALS	1 363 712	1 872	1 365 584

Table D6
ANNUAL SUMMARY OF FOREST FIRE LOSSES (For Calendar Year 1981)

FOREST	LAND AFFECTED						VOLUME LOSS		TOTAL SUPPRESSION COSTS (Dollars)
	CROWN LAND				PRIVATE LAND (ha.)	TOTAL LAND AREA (ha.)	SAW TIMBER (M cubic metres)	OTHER (M cubic metres)	
	Merchant Timber (ha.)	Potential Product. (ha.)	Non-Product. (ha.)	Total (ha.)					
Athabasca	192 782	448 791	284 753	926 326	0	926 326	4 345 987	13 734 038	13 038 964
Bow/Crow	38	73	1	112	1	113	-	-	270 058
Edson	102	10	1	113	19	132	-	-	528 969
Footner Lake	176 464	98 656	124 719	399 839	39	399 878	2 217 796	6 153 030	17 793 086
Grande Prairie	8	19	30	57	184	241	-	-	901 746
Lac La Biche	10 557	377	8 637	19 571	306	19 877	72 188	380 847	4 515 759
Peace River	402	4	119	525	455	980	7 278	26 621	3 769 198
Rocky/Clearwater	1	-	1	2	1	3	-	-	122 720
Slave Lake	15 321	16	1 419	16 756	702	17 458	1 169 474	1 518 009	9 381 435
Whitecourt	102	27	7	136	140	276	-	-	1 346 268
TOTAL FORESTS	395 777	547 973	419 687	1 363 437	1 847	1 365 284	7 812 723	21 812 545	51 668 203
Metis Colonies	1	-	69	70	-	70	-	-	7 903
Indian Reserves	4	8	61	73	-	73	-	-	123 482
TOTAL PROTECTION AREA	395 782	547 981	419 817	1 363 580	1 847	1 365 427	7 812 723	21 812 545	51 779 588
TOTAL RURAL AREA	21	-	111	132	25	157	-	-	36 054
GRAND TOTAL	395 803	547 981	419 928	1 363 712	1 872	1 365 584	7 812 723	21 812 545	51 835 642
							Other fire related costs Inc. fixed budget		22 198 228
								TOTAL	74 033 870

Table D7

TEN-YEAR COMPARISON OF FIRE CAUSES
(By Percentage)

Cause	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Recreation	14.8	17.2	14.5	26.4	17.6	26.4	19.3	23.2	10.1	14.7
Settlement	11.4	15.3	5.5	11.4	13.4	10.4	7.4	4.3	14.8	8.8
Railroads	1.5	5.6	1.2	2.2	1.4	4.5	3.7	0.5	1.4	1.4
Lightning	43.7	26.6	46.2	29.3	23.8	23.7	42.4	51.8	45.2	55.4
Other Industries	4.3	7.5	4.5	3.2	6.1	9.4	6.0	5.3	7.3	3.8
Forest Industry	1.8	2.5	3.3	3.3	3.6	2.5	0.8	1.0	1.8	1.1
Incendiary	8.5	5.6	6.4	8.5	20.8	9.4	8.0	5.7	9.0	4.5
Public Projects	3.0	1.3	3.3	2.3	1.3	2.3	1.7	1.6	0.7	1.5
Unclassified	5.7	11.3	8.2	10.4	7.5	10.3	8.9	5.1	8.0	6.4
Unknown	5.3	7.1	6.9	3.0	4.4	1.1	2.0	1.5	1.9	2.4

Table D8

FIVE-YEAR SUMMARY —— AIRCRAFT REPORT

	1977		1978		1979		1980		1981	
All Aircraft	No.	Hour	No.	Hour	No.	Hour	No.	Hour	No.	Hour
Helicopters	47	5 687	72	7 787	125	8 237	206	27 525	248	38 311
Fixed Wing	124	3 828	76	3 689	122	4 825	140	11 311	198	9 149
Air Tankers	10	658	11	1 023	17	1 633	48	4 415	52	5 281
TOTAL	181	10 173	159	12 499	264	14 695	394	43 251	498	52 741

Table D9

TEN-YEAR SUMMARY OF FIRES

Year	Total Fires	*Non-Forested (Hectares)	Forested (Hectares)	Total Area (Hectares)	Suppression Costs
1972	737	11 364	37 925	29 290	5 179 163
1973	478	2 073	8 576	10 690	2 377 984
1974	598	2 299	15 689	18 392	5 619 951
1975	693	1 632	4 156	5 789	3 951 032
1976	774	5 313	17 124	22 473	3 681 894
1977	556	6 049	3 981	10 030	1 176 666
1978	653	5 017	2 773	17 790	2 787 901
1979	1 000	509	194 088	194 597	8 679 644
1980	1 348	204 054	465 106	669 159	26 805 764
1981	1 522	419 928	943 784	1 363 712	51 835 642

E. FOREST RESEARCH

Due to position classification difficulties we were unable to recruit forest research managers. Therefore only contract and grant funds were used to conduct research by other agencies in the areas of reforestation, growth and yield, site classification and genetics.

In January 1982 a research manager for site classification was hired on contract to initiate in-house research capability.

Table E1

RESEARCH EXPENDITURES

Source of Funding	Number of Projects Funded	Total $ Expenditures
Forest Development Research Trust Fund	8	131 024
Research Contracts	15	229 680
TOTAL	23	360 704

POOR

QUALITY

ORIGINAL